

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Date: December 14, 2007

Eric R. KERN, et al.

Confirmation No: 4794

Serial No: 10/606,392

Group Art Unit: 2155

Filed: June 25, 2003

Examiner: Benjamin R. Bruckart

Title: SIMULTANEOUS SHARING OF STORAGE DRIVES ON BLADE
CENTER

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Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

SUBSTITUTE BRIEF ON APPEAL

In response to the Office Communication mailed December 12, 2007, Appellant provides this Substitute Brief on Appeal including a correction to the status of claims as noted in the Office Communication.

(1) Real Party in Interest

The real party in interest is International Business Machines Corporation by virtue of an assignment from the inventors recorded in the U.S. Patent Office on November 3, 2003, reel no. 014661, frame no. 0488.

(2) Related Appeals and Interferences

There are no appeals, interferences, or judicial proceedings known to Appellant, the Appellant's legal representative, or Assignee, which may be related to, directly affect,

be directly affected by, or have a bearing on the decision by the Board of Patent Appeals and Interferences in the pending appeal.

(3) Status of Claims

Claims 1, 22-23, 36, and 40-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US 2004/0181601 to Sakthikumar (“Sakt”) in view of US 2002/0124114 to Bottom et al. (“Bottom”).

Claims 24-25, 37-38, and 42-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom and U.S. Patent No. 6,975,581 to Medina et al. (“Medina”).

Claims 39 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom, Medina, and US 2003/0033517 to Rutherglen et al. (“Rutherglen”).

Claims 1, 22-25, and 36-44 are being appealed.

(4) Status of Amendments

A reply to the Final Office Action was submitted on October 01, 2007, in which no claims were amended. Therefore, there are no unentered amendments subsequent to the final rejection.

(5) Summary of Claimed Subject Matter

A Blade Center typically comprises a plurality of blade servers that are managed by a management system. For example, a Blade Center provided by International Business Machines Corporation™ comprises fourteen independent blade servers that are connected across a backplane through an Ethernet switch. Specification, page 1, lines

6-10. In a conventional Blade Center, generally only one of the blade servers can connect with a local drive or a remote drive at a time. Thus, for a different blade server to connect with the local drive, a blade server that is currently connected to the local drive must first be disconnected. Specification, page 2, lines 4-7. The present invention is directed to techniques that permit a plurality of blade servers to simultaneously connect with one or more drives. Specification, page 2, lines 15-17.

Accordingly, independent claim 1 recites a method for providing simultaneous access between a storage drive and a plurality of blade servers. The method includes configuring the plurality of blade servers to simultaneously connect with the storage drive, in which the plurality of blade servers is managed by a management system and the storage drive is coupled to the management system (specification, page 5, lines 13-15; specification page 4, lines 16-20). The method further includes each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server (specification, page 5, lines 18-19); and the management system managing simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive (specification, page 5, lines 19-21; specification, page 7, lines 6-9).

Independent claim 22 recites a system that includes a management system; a storage drive connected to the management system; and a plurality of blade servers managed by the management system (specification, page 4, lines 16-19; FIG. 2). Each blade server of the plurality of blade servers is configured to simultaneously connect with the storage drive and route data packets between the management system and the blade

server (specification, page 5, lines 18-19). The management system manages simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive (specification, page 5, lines 19-21; specification, page 7, lines 6-9).

Independent claim 40 recites a computer readable medium encoded with a computer program for providing simultaneous access between a storage drive and a plurality of blade servers. The computer program comprising computer executable instructions for configuring the plurality of blade servers to simultaneously connect with the storage drive, in which the plurality of blade servers is managed by a management system and the storage drive is coupled to the management system (specification, page 5, lines 13-15; specification page 4, lines 16-20). The computer program further comprises computer executable instructions for each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server (specification, page 5, lines 18-19); and the management system managing simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive (specification, page 5, lines 19-21; specification, page 7, lines 6-9).

(6) Grounds of Rejection to be Reviewed on Appeal

1. Applicant requests review as to claims 1, 22-23, 36, and 40-41 and their rejection under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom.

2. Applicant requests review as to claims 24-25, 37-38, and 42-43 and their rejection under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom and Medina.

3. Applicant requests review as to claims 39 and 44 and their rejection under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom, Medina, and Rutherglen.

(7) Argument

1. **Claims 1, 22-23, 36, and 40-41 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom.**

(A) Claims 1, 22-23, 36, and 40-41

Claim 1 recites a method for providing simultaneous access between a storage drive and a plurality of blade servers. In particular, the method includes configuring the plurality of blade servers to simultaneously connect with the storage drive, in which the plurality of blade servers is managed by a management system and the storage drive is coupled to the management system. The method further includes each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server, and the management system managing simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive.

A potential advantage of such a method is that an increase in efficiency may be realized relative to conventional systems in which only a single blade server can access a storage drive (specification, page 2, lines 18-22).

(A)(i) Sakt fails to disclose a management system managing simultaneous access of a plurality of blade servers to a storage drive.

Sakt discloses a system 10 including a routing device 20 that permits client devices 30, 35 to share a peripheral device 40 that is coupled to the routing device 20 (see FIG. 1). The Examiner recognizes that Sakt fails to disclose a management system that

manages simultaneous access of a plurality of blade servers to a storage drive. The Examiner, however, asserts that this limitation, absent from Sakt and recited in claim 1, is disclosed by Bottom.

(A)(ii) Bottom fails to disclose a management system managing simultaneous access of a plurality of blade servers to a storage drive.

Bottom discloses a modular server system including a midplane that has a plurality of blade interfaces (see Abstract). As shown in the embodiment of FIG. 1, up to sixteen blade servers and sixteen media blades can be plugged into the midplane 170. Each media blade is adapted to carry a mass storage medium device (such as a hard drive) as a companion to a server blade (see paragraph 0035). In addition, each server blade may also have a universal serial bus (USB) connector that allows the server blade to connect to a hard drive (see paragraph [0033]).

Although Bottom discloses that a plurality of blade servers can have access to a storage device – i.e., through a USB connector or through the midplane – Bottom fails to disclose that a plurality of blade servers can simultaneously access a storage drive. As described in the background section of Applicant's specification, in a conventional blade server system, only one blade server can connect to a storage drive at a time, and for a different blade server to connect to the storage drive, a currently connected blade server must first be disconnected (specification page 2, lines 4-7). Applicant respectfully submits that Bottom discloses such a conventional blade server system in which each blade server includes interrupt controllers 526 so that only one blade server can access a given storage device at a time.

In the Advisory Action mailed October 18, 2007, the Examiner further asserts that there is no indication in Bottom that the blades need to be disconnected or interrupted to

allow another blade access to a hard drive. Applicant agrees with the Examiner in that there simply is no indication (or teaching) in Bottom as to how multiple blade servers access a single hard drive. Consequently, Bottom cannot disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive.

(A)(iii) The Examiner has failed to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Both Sakt and Bottom fail to disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive, as recited in claim 1. Consequently, the combination of Sakt and Bottom cannot render claim 1 obvious. Claims 36-39 depend from claim 1 and are, therefore, improperly rejected for at least the same reasons.

Independent claims 22 and 40 each incorporates limitations similar to those of claim 1 and are, therefore, improperly rejected for at least the same reasons. Claims 23 and 41 respectively depend from claims 22 and 40 and are, therefore, improperly rejected for at least the same reasons.

2. **Claims 24-25, 37-38, and 42-43 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom and Medina.**

(B) Claims 24-25, 37-38, and 42-43

Claims 24-25 depend from claim 22, claims 37-38 depend from claim 1, and claims 42-43 depend from claim 40.

(B)(i) Medina fails to disclose a management system managing simultaneous access of a plurality of blade servers to a storage drive.

Putting aside the issue of whether Medina discloses the limitations of claims 24-25, 37-38, and 42-43, Medina (as with Sakt and Bottom) fails to disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive. Nor does the Examiner cite Medina as disclosing this limitation. The Applicant respectfully submits that claims 24-25, 37-38, and 42-43 are, therefore, improperly rejected for reasons similar to those discussed above.

(B)(ii) The Examiner has failed to establish a *prima facie* case of obviousness.

As discussed above, Sakt and Bottom, and Medina fail to disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive, as required by claims 24-25, 37-38, and 42-43. Consequently, the combination of Sakt and Bottom, and Medina cannot render claims 24-25, 37-38, and 42-43 obvious.

3. **Claims 39 and 44 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakt in view of Bottom, Medina, and Rutherglen.**

(C) Claims 39 and 44

Claims 39 and 44 respectively depend from claims 1 and 40.

(C)(i) Rutherglen fails to disclose a management system managing simultaneous access of a plurality of blade servers to a storage drive.

Putting aside the issue of whether Rutherglen discloses the limitations of claims 39 and 44, Rutherglen (as with Sakt, Bottom, and Medina) fails to disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive. Nor does the Examiner cite Rutherglen as disclosing this limitation. The Applicant respectfully submits that claims 39 and 44 are, therefore, improperly rejected for reasons similar to those discussed above.

(C)(ii) The Examiner has failed to establish a *prima facie* case of obviousness.

As discussed above, Sakt, Bottom, and Medina, and Rutherglen fail to disclose a management system that manages the simultaneous access of a plurality of blade servers to a storage drive, and routes data packets received from the plurality of blade servers to the storage drive, as required by claims 39 and 44. Consequently, the combination of Sakt, Bottom, and Medina, and Rutherglen cannot render claims 39 and 44 obvious.

Please charge any fee that may be necessary for the continued pendency of this application to Deposit Account No. 50-0563 (IBM Corporation).

Respectfully submitted,
SAWYER LAW GROUP LLP

December 14, 2007
Date

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Appendix of Claims

1. (Previously Presented) A method for providing simultaneous access between a storage drive and a plurality of blade servers, the method comprising:

configuring the plurality of blade servers to simultaneously connect with the storage drive, wherein the plurality of blade servers is managed by a management system and the storage drive is coupled to the management system;

each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server; and

the management system managing simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive.

2-21. (Cancelled)

22. (Previously Presented) A system comprising:

a management system;

a storage drive connected to the management system; and

a plurality of blade servers managed by the management system,

wherein each blade server of the plurality of blade servers is configured to simultaneously connect with the storage drive and route data packets between the management system and the blade server, and wherein the management system manages

simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive.

23. (Previously Presented) The system of claim 22, wherein each of the plurality of blade servers is configured to have a separate interface for communicating with the storage drive.

24. (Previously Presented) The system of claim 23, wherein each blade server of the plurality of blade servers simultaneously routes data packets between the management system and the blade server in accordance with a Virtual Local Area Network (VLAN) protocol.

25. (Previously Presented) The system of claim 24, wherein the storage drive is one of a diskette drive or a CDROM drive.

26-35. (Cancelled)

36. (Previously Presented) The method of claim 1, wherein configuring the plurality of blade servers to simultaneously connect with the storage drive includes configuring each of the plurality of blade servers to have a separate interface for communicating with the storage drive.

37. (Previously Presented) The method of claim 36, wherein each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server includes each blade server routing data packets to and from the management system in accordance with a Virtual Local Area Network (VLAN) protocol.

38. (Previously Presented) The method of claim 37, wherein the storage drive is one of a diskette drive or a CDROM drive.

39. (Previously Presented) The method of claim 37, wherein:

the storage drive is a remote storage drive relative to the management system, the remote storage drive being coupled to a remote system that is in communication with the management system through a network; and

the management system managing shared access of the plurality of blade servers to the storage drive includes the management system uploading an applet to the remote system, the applet establishing a connection between the remote storage drive and each blade server of the plurality of blade servers.

40. (Previously Presented) A computer readable medium encoded with a computer program for providing simultaneous access between a storage drive and a plurality of blade servers, the computer program comprising computer executable instructions for:

configuring the plurality of blade servers to simultaneously connect with the storage drive, wherein the plurality of blade servers is managed by a management system and the storage drive is coupled to the management system;

each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server; and

the management system managing simultaneous access of the plurality of blade servers to the storage drive, including routing the data packets received from the plurality of blade servers to the storage drive.

41. (Previously Presented) The computer readable medium of claim 40, wherein the computer executable instructions for configuring the plurality of blade servers to simultaneously connect with the storage drive include computer executable instructions for configuring each of the plurality of blade servers to have a separate interface for communicating with the storage drive.

42. (Previously Presented) The computer readable medium of claim 41, wherein the computer executable instructions for each blade server of the plurality of blade servers simultaneously routing data packets between the management system and the blade server includes each blade server routing data packets to and from the management system in accordance with a Virtual Local Area Network (VLAN) protocol.

43. (Previously Presented) The computer readable medium of claim 42, wherein the storage drive is one of a diskette drive or a CDROM drive.

44. (Previously Presented) The computer readable medium of claim 42, wherein:

the storage drive is a remote storage drive relative to the management system, the remote storage drive being coupled to a remote system that is in communication with the management system through a network; and

the computer executable instructions for the management system managing shared access of the plurality of blade servers to the storage drive include computer executable instructions for the management system uploading an applet to the remote system, and the applet establishing a connection between the remote storage drive and each blade server of the plurality of blade servers.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None